Amendments to the Claims

1-38. (Canceled)

39. (Previously Amended) A method of controlling the porosity and pore size distribution of ceramic bodies comprising:

selecting a carboxylic acid composition that will result in a desired porosity and pore size distribution;

reacting boehmite with said carboxylic acid composition to produce carboxylate-alumoxane nanoparticles,

drying the carboxylate-alumoxane nano-particles,

re-dissolving the carboxylate-alumoxane nano-particles in a solvent,

drying the nano-particles, and

firing the dried nano-particles at a temperature greater than 300 °C.

40. (Original) The method of claim 39 wherein the boehmite is pseudo-boehmite.

41. (Original) The method of claim 39 wherein the ceramic body comprises the thermolysis product of a carboxylate-alumoxane represented by the formula $[Al(O)_x(OH)_y(O_2CR)_z]_n$, wherein x is from 0 to 1.5, y is from 0 to 3, z is from 0 to 3, n is greater than 6, and R is hydrogen or an organic group.

42. (Original) The method of claim 41 wherein each R, which may be the same or different, is hydrogen or an organic group selected from the group consisting of alkyl, alkenyl, aromatic, haloalkyl, haloalkenyl, and haloaromatic groups or alkyl, alkenyl, and aromatic ether groups or an organic group containing a hetero-atom including, oxygen, nitrogen, sulfur, phosphorous.

43. (Original) The method of claim 41 wherein the carboxylate is derived from a carboxylic acid selected from the group consisting of acetic acid, methoxyacetic acid, methoxyethoxyacetic acid, and methoxyethoxyethoxyacetic acid.

44. (Previously Amended) The method of claim 43 wherein the carboxylate-alumoxane is the reaction product of a carboxylic acid and boehmite.

45. (Previously Amended) The method of claim 43 wherein the carboxylate-alumoxane is the reaction product of a carboxylic acid and pseudo-boehmite.

46. (Previously Amended) A method of controlling the porosity and pore size distribution of a aluminum oxide based ceramic body ~~bodies~~ comprising

reacting boehmite with a carboxylic acid to produce carboxylate-alumoxane nanoparticles,

drying the carboxylate-alumoxane nano-particles,

re-dissolving the carboxylate-alumoxane nanoparticles in a solvent,

evaporating the solvent so as to deposit the nanoparticles on a substrate, and

firing the deposited nanoparticles at a temperature greater than 300°C so as to form an aluminum oxide based ceramic body;

wherein the ceramic body comprises the thermolysis product of a carboxylate-alumoxane represented by the formula $[Al(O)_x(OH)_y(O_2CR)_z]_n$, wherein x is from 0 to 1.5, y is from 0 to 3, z is from 0 to 3, n is greater than 6, and R is hydrogen or an organic group;

wherein the carboxylate is derived from a carboxylic acid selected from the group consisting of acetic acid, methoxyacetic acid, methoxyethoxyacetic acid, and methoxyethoxyethoxyacetic acid; and

wherein the carboxylate-alumoxane is the reaction product of two or more carboxylic acids and boehmite.

47. (Previously Amended) The method of claim 46 wherein the carboxylate-alumoxane is the reaction product of the sequential reaction of two or more carboxylic acids with boehmite.

48. (Previously Amended) The method of claim 46 wherein the carboxylate-alumoxane is the reaction product of the parallel reaction of two or more carboxylic acids with boehmite.

49. (Previously Amended) The method of claim 46 wherein the carboxylate-alumoxane is the reaction product of the sequential reaction of a first carboxylic acid with boehmite to make a product, followed by the reaction of said product with a second carboxylic acid.

50. (Previously Amended) The method of claim 46 wherein the carboxylate-alumoxane is the reaction product of two or more carboxylic acids and pseudo-boehmite.

51. (Currently Amended) The method of claim <u>46</u> ~~49~~ wherein the carboxylate-alumoxane is the reaction product of the sequential reaction of a first carboxylic acid with pseudo-boehmite to make a product, followed by the reaction of said product with a second carboxylic acid.

52. (Previously Amended) The method of claim 39, further comprising introducing the dissolved carboxylate-alumoxane nanoparticles to a ceramic support.

53. (Previously Amended) The method of claim 52 wherein deposition of the nanoparticles takes place on the support.

54. (Original) The method of claim 53 wherein the support comprises a mold.

55. (Original) The method of claim 54 wherein the mold comprises a porous material.

56. (Original) The method of claim 55 wherein the porous material comprises a filter.

57. (Original) The method of claim 56 wherein the filter comprises a frit.

58. (Original) The method of claim 39 wherein the solvent comprises water.

59. (Original) The method of claim 39 wherein the ceramic body comprises a membrane.

60. (Canceled)

61. (Amended) The method of claim 39 further comprising infiltrating the dissolved carboxylate-alumoxane nanoparticles to a ceramic support

62. (Currently Amended) A method of controlling the porosity and pore size distribution of a ceramic body ~~bodies~~ comprising

mixing two or more carboxylic acids to produce a carboxylic acid mixture;

reacting boehmite with the carboxylic acid mixture to produce carboxylate-alumoxane nanoparticles,

drying the carboxylate-alumoxane nano-particles,

re-dissolving the carboxylate-alumoxane nano-particles in a solvent,

drying the nano-particles, and

firing the dried nano-particles at a temperature greater than 300 °C so as to form a ceramic body.

63. (Currently Amended) A method of controlling the porosity and pore size distribution of a ceramic body ~~bodies~~ comprising

reacting boehmite sequentially with two or more carboxylic acids to produce carboxylate-alumoxane nanoparticles,

drying the carboxylate-alumoxane nano-particles,

re-dissolving the carboxylate-alumoxane nano-particles in a solvent,

drying the nano-particles, and

firing the dried nano-particles at a temperature greater than 300 °C so as to form a ceramic body.

64-72. (Withdrawn)

73. (Previously Amended) The method of claim 39 wherein the dried nanoparticles are fired slowly at a temperature sufficient to burn off organic constituents.

74. (Currently Amended) A method of controlling the porosity and pore size distribution of a ceramic body bodies comprising:

selecting a carboxylic acid composition that will result in a desired porosity and pore size distribution;

reacting boehmite with said carboxylic acid composition to produce carboxylate-alumoxane nanoparticles,

drying the carboxylate-alumoxane nano-particles,

re-dissolving the carboxylate-alumoxane nano-particles in a solvent,

drying the nano-particles, and

firing the dried nano-particles at a temperature between 25 °C and 225 °C so as to form a ceramic body.

75. (Previously Amended) The method of claim 74 further comprising holding the nanoparticles at a temperature of 225°C for 30 minutes.

76. (Previously Amended) The method of claim 74 wherein the nanoparticles are fired at a temperature that is ramped from 25°C to 225°C at a rate of 1°C per minute.

77. (Previously Amended) The method of claim 76 further comprising holding the nanoparticles at a temperature of 225°C for 30 minutes.

78. (Previously Amended) The method of claim 39 further comprising holding the nanoparticles at a temperature of 300°C for 80 minutes.

79. (Previously Amended) The method of claim 39 further comprising firing the nanoparticles by ramping the temperature to 1100°C at a rate of 2°C per minute.

80. (Previously Amended) The method of claim 79 further comprising holding the nanoparticles at a temperature of 1100°C for 400 minutes.

81. (Previously Amended) The method of claim 79 further comprising cooling the nanoparticles slowly to room temperature.

82. (New) A method of controlling the porosity and pore size distribution of a ceramic body ~~bodies~~ comprising:

a) reacting boehmite or pseudo-boehmite with two or more carboxylic acids to produce carboxylate-alumoxane nanoparticles;

b) drying the carboxylate-alumoxane nano-particles;

c) re-dissolving the carboxylate-alumoxane nano-particles in a solvent;

d) drying the nano-particles; and

e) firing the dried nano-particles at a temperature greater than 300°C so as to form a ceramic body.